

THE PHONOGRAM.

THE OFFICIAL ORGAN OF THE PHONOGRAPH COMPANIES OF THE UNITED STATES.

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COLUMBIA PHONOGRAPH COMPANY,**

627 E Street, N. W., Washington, D. C.



A MAGAZINE devoted to all interests connected with the recording of sound, the reproduction and preservation of speech, the Telephone, the Typewriter, and the progress of Electricity.

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ADVERTISEMENTS.

THE PHONOGRAM, having special facilities in its circulation through the vast commercial system occupied by the Phonograph, Telephone, and other Electrical Devices, presents an exceptionally valuable advertising medium. The rates are reasonable and will be furnished on application.

CORRESPONDENCE

relating to the Phonograph, Typewriter, or Electricity, in any of their practical applications, is cordially invited, and the coöperation of all electrical thinkers and workers earnestly desired. Clear, concise, well-written articles are especially welcome; and communications, views, news items, local newspaper clippings, or any information likely to interest electricians, will be thankfully received and cheerfully acknowledged.

Mr. Edison's Forecast.

"The phonograph is a new thing. It will take four or five years to pioneer it. It will be greater than the telephone.

"It took twelve years to pioneer the typewriter. To pioneer a thing is to get it on its feet.

"I firmly believe the day will come when business men will look upon the phonograph as an absolute necessity; this is already the opinion of many men in the largest offices of New York. It will some day be a factor of the greatest value in commercial life.

"The introduction of the phonograph, like

that of the typewriter, the electric light and electric motor, will be a gradual movement. Humanity marches slowly, but when it strikes a pace there is nothing to stop it."

These were Mr. Edison's words when recently interrogated as to his especial pet invention, the phonograph, whose seeming want of popularity his interviewer gently alluded to.

From one of the early numbers of THE PHONOGRAM we gain an account of the conception and creation of the phonograph.

Mr. Edison wanted an instrument that would "click" out a message and his ingenious brain devised it. It is stated that the instrument maker who was engaged to execute the commission, when he had finished his task and listened for the first time to the automatic sounds, was seized with fright and nearly fell to the ground; and that Mr. Edison's own nerves were shaken.

We consider this initial step in the construction of the phonograph a giant stride; the subsequent changes and improvements in the machine seem less wonderful though more striking and fruitful in their results.

Proceeding now to the domain of the practical apparatus yept the phonograph, which has cut such a wide swathe in the industrial fields of the nineteenth century, let us advert to its inventor's own words of prophecy concerning it.

He enumerated its uses, and though these have not as yet become universal like reading, writing and sewing, they are growing more general every day. He mentioned letter-writing and dictation without a stenographer; teaching the blind to read without an alphabet; teaching elocution and foreign lan-

guages; reproduction of music; a family record or cylinders to which a family may speak, for preservation; music boxes and toys; clocks announcing meals and hours for retiring; lessons from teachers to refresh the memories of pupils; and last, though not least, the invaluable aid rendered the telephone by connecting it with the phonograph and making its records permanent instead of fleeting.

We need no one to tell us that these prophecies have been fulfilled, for in the daily journals this fact is chronicled; and each day brings us information of still greater triumphs won by the talking machine. The poor mute, whose misfortune separates him from his brother man, can avail himself of its assistance to attain the level of the rest of his race. We know one particular instance of a little child born a mute, whose life is brightened by the sweet sounds afforded through the phonograph, when all else to her is a blank.

Furthermore, the phonograph operators are now in the habit of connecting this instrument with the telephone, and when a telephone operator is absent at a time when a message is sent to him, the phonograph cylinder will take a record of this message and keep it until the absent clerk returns. Its importance as a factor in the work of sending telephonic messages to long distances is explained in another article.

It is an able coadjutor of the drill-master and an efficient help to the teacher of singing.

An expedition is also forming, whose mission will be to carry the phonograph to South Africa for experimenting among the monkeys. If, as scientists have asserted, we are descended from the Simian race, and the conductors of this mission succeed in establishing communication with it and discover a genuine vocabulary, we shall then owe to the phonograph the obligation of teaching us our "Mother Tongue."

The phonograph is found to be of value on board ships and in hotels, and will doubtless ere long supplement the labors of the tired car conductor in announcing the names of stations.

A still wider field for the phonograph will be secured in the Postal Departments. Mr. Wanamaker has many good schemes promised for the new year, such as a foreign postal card with stamped coupon attached for prepaid reply; duplex house letter boxes,

in one side of which the postman can deliver his mail, while the householder can put his letters in the other; the phonograph has also been discussed, and ultimately a phonograph station will be found in every post-office just as a telegraph station now exists. From these points messages will be sent, at the price of a few cents, to the nethermost parts of the world. Mr. Wanamaker will probably be the first to inaugurate this system, since he has always been in advance of others in the matter of grand improvements.

Therefore, in looking back at the strides taken by this invention during the past year, we can but realize that Mr. Edison's prophecy has taken root, and is now being fulfilled.

Annual Meeting of Stockholders.

The annual meeting of stockholders of the North American Phonograph Company took place at the offices of the company on the 29th day of December, 1891, and the following were elected as directors for the ensuing year. Thos. A. Edison, Samuel Insull, J. Adriance Bush, A. O. Tate, M. A. Nolan, Scott Tremaine and Thos. R. Lombard.

At a meeting of the Board of Directors held a few days afterwards the following officers were duly elected: Samuel Insull, president; Thos. R. Lombard, vice-president; Cleveland Walcutt, secretary, and Thos. Butler, treasurer.

The New York office of the Company will hereafter be in the Edison building, No. 44 Broad street, New York.

The Phonograph Cures Deafness.

Dr. H. F. Garey, of the Southern Homeopathic Hospital, Baltimore, whose experiments in the treatment of deafness by the use of the phonograph were mentioned in our last number, is having wonderful success in this work. Dr. Garey's offices are thronged by persons hitherto regarded as incurable, who have heard of his marvelous cures; and not a day passes without new and strong evidence of the efficacy of the phonograph as a healer.

The Taylor Battery Co., of New York, writes us: "THE PHONOGRAM ads. are a great success."

The New President of the North American Phonograph Company.

Mr. Samuel Insull, the newly elected president of the North American Phonograph Company, comes into position full of honors. Mr. Insull has for many years been connected with Mr. Edison, both in the laboratory at Orange, and as 2d vice-president of the Edison General Electric Company.

Mr. Insull is a man of wide experience, has a thorough knowledge of the phonograph and all details relating to it, is ardent in promoting the success of this pet invention of Mr. Edison, and fully capable of sustaining all of the responsibilities attached to this post.

With such an officer at the head of affairs aided by a judiciously selected Board of Directors, this industry is sure to assume an improved commercial aspect, the activity existing at fountain head imparting in strong pulsations its force to all minor branches.

A Want Unfilled.

Within the last decade there has been throughout the world an enormous increase in the invention and sale of mechanical appliances designed to be used with motors, and it is a well-known fact, that while the former have produced satisfactory results the latter are rated as objectionable in many ways.

The principal points raised against the motors are as follows:

1. They do not produce a current of constant potential.
2. They are difficult to manage.
3. They are too costly.
4. They require excessive care.
5. They will not run longer than a year.
6. They are malodorous.
7. They are uncleanly.
8. They are of inconvenient bulk.

Now as the need for these essential co-adjustors to machinery is widespread and urgent, we call it to the attention of inventors in all countries. If, "in a multitude of counsellors there is safety," by a parity of reasoning good results may be expected to proceed from the concentrated efforts of the "grand army of inventors," when once their minds are focussed upon this question.

Important Evidence of the Merits of the Phonograph.

The following letter from a prominent government official at Washington carries along with it such convincing proof of the usefulness of the phonograph, as will attract attention from a large class of citizens in business circles, who would not be impressed by the ordinary testimonials usually published to meet the eye of the public.

The First Assistant Postmaster-General goes further, and indicates with commendable zeal directions in which the public service may be benefitted, and its servants assisted in their work by the employment of this valuable instrument. Would that all the officers were as broad-minded as the Honorable S. A. Whitfield.

POST-OFFICE DEPARTMENT.
OFFICE OF THE FIRST ASSISTANT POST-MASTER-GENERAL.

WASHINGTON, December 18, 1891

E. D. EASTON, Esq., President The Columbia Phonograph Co., No. 627 E street, N. W., Washington, D. C.

DEAR SIR:—I beg to state that of the three sets of phonographs furnished the office under my charge, two have been in constant use, and the third will be as soon as room to locate it can be had by rearrangement of present crowded quarters.

They give excellent satisfaction, and have fully demonstrated their worth as a time and labor-saving device.

They are desirable not only for office purposes, but for use at the private rooms of government officers who are so crowded during the day as to compel them to resort to night work. They do not, like stenographic dictation, compel the attendance of the secretary, who is oftentimes obliged to devote his evenings to transcription of matter given during the business hours of the day.

Very respectfully,

S. A. WHITFIELD,

First Assistant Postmaster-General.

The Accumulator Company to Continue Business.

In the case of the Brush Electric Co. vs. The Accumulator Co., Hon. Edward T. Green, Judge of the United States Circuit Court of Trenton, lately issued an order permitting the Accumulator Co. to supply its customers with storage batteries until the further order of the Court, on its merits.



REPORTING BY PHONOGRAPH.

BY EDWARD D. EASTON, PRESIDENT COLUMBIA PHONOGRAPH COMPANY.



I have been asked to prepare for THE PHONOGRAM an article on the Edison Phonograph as a substitute for shorthand in verbatim reporting. Before the advent of the phonograph, I spent seventeen years as a stenographer, most of the time in Washington, in the United States Supreme Court, in Congress, and in general work. Since abandoning shorthand I have been for three years constantly engaged in talking-machine work, and therefore believe myself quite familiar with the whole subject.

No successful shorthand reporting can be done without years of preliminary training. Not one person out of a hundred who begins shorthand succeeds in acquiring such proficiency as to be able to do even ordinary reporting well. A large fund of general information is necessary as a foundation; and then, shorthand must be thoroughly mastered. One who is in other

respects well fitted for the work, and *succeeds in the acquirement of rapid shorthand in five years would do very well.*

A large proportion of the stenographic reporters write too slowly and inaccurately to make faithful records; and are severely tortured mentally while endeavoring to decipher such notes as they have made. But, passing this by no means insignificant point, and assuming that shorthand skill is fully acquired and the notes of a speech or sermon are properly taken, the stenographer must then, under the old plan, either proceed to write out his notes in longhand, a slow and laborious process, or dictate them to other stenographers, to rapid typewriter operators, or to longhand writers. This process takes from one and a half to six times as long as the note-taking required. Then comes the revision, correction of the errors of the amanuensis, etc.

To report successfully by the phonograph requires as large a fund of general information as the shorthand writer should possess. That being secured, instead of looking forward to one, two, three, four, or five

years of stenographic labor, the aspirant finds it only necessary to procure two phonographs and devote himself to their mastery. This he should accomplish in a few hours.

His attention should then be directed to practicing as follows: Let him place the machines side by side, with an ample supply of blank cylinders. The services of a reader must now be procured. The reader should be instructed to begin reading, at the rate of, say, one hundred words per minute. The phonograph reporter repeats in a low tone the words uttered by the reader to Phonograph No. 1, until he has filled the cylinder; then turns to Phonograph No. 2 and proceeds to fill that cylinder, a small boy or other attendant in the meantime removing the filled cylinder from Phonograph No. 1, and placing another blank on the instrument. This process is repeated, the reader increasing his speed to correspond with the progress made by the use of the phonograph.

Repeating the words of speakers is a task which can be mastered in a surprisingly short time. A person not acquainted with shorthand, but otherwise properly equipped, should graduate as a phonograph reporter and begin actual work in a month or less from the time he begins experimenting; while a trained shorthand reporter, who is already practiced in the mental process involved, can make the change after a few hours of practice, and thereafter do his work with an expenditure of very much less time and effort.

The words to be reported having been repeated to the phonograph, it is now only necessary that the records be turned over to typewriter operators who, while the reporter is resting, proceed to transcribe his work and revise the copy from the cylinder, thus saving the two processes from which the shorthand writer cannot escape, dictation and revision.

The gain is as follows:

1. Saving of years of study in learning shorthand.

2. Saving of mental strain and effort, repeating being so much easier than writing.

3. Saving of dictation by the stenographer.

4. Saving of revision by the stenographer from his notes.

5. Saving of time in delivering copy.

It should be remembered that while the average shorthand reporter can make no progress towards a transcript until he is through taking notes (a few instances only being known where the reporter's notes can be read by his assistants, the rule being that even the reporter himself finds them hard to decipher), the cylinders of the phonograph reporter, as fast as filled, can be sent immediately to typewriter operators, who proceed at once to transcribe them, and have most of the copy ready by the time the report is concluded.

In the past, the single material objection to reporting by the phonograph has been that it was not easy to so lower the voice as to make a clear and unmistakable record, while not disturbing the speaker or audience. The desired result has been successfully reached by intelligent and careful men, but there have also been unsuccessful attempts, the failure being clearly chargeable to lack of preparation on the part of the would-be reporter.

Happily, this difficulty is entirely out of the way. An extra sensitive reporting diaphragm can now be procured on order. Where this diaphragm is used, there is no difficulty whatever in making a perfectly satisfactory record, in a tone so low that even a person standing close by the phonograph would not be disturbed. Diaphragms of this description were sent to Washington, and successfully used in reporting the proceedings of the great Ecumenical Council, the most important Prot-

estant religious gathering in the world; and this experience has given, in Washington, reporting by phonograph a decided impetus.

The last two annual conventions of the phonograph companies of the United States were reported with standard instruments, not a line of shorthand being used. The work was done by Mr. William Herbert Smith, a well-known Washington reporter, and Mr. Henry D. Goodwin, of Milwaukee, an experienced Western stenographer. The proceedings of the first convention covered two hundred and ten closely printed pages, while those of the second covered one hundred and forty-three pages.

The simplest form of reporting by phonograph, where there is a single speaker is, of course, to so arrange a large funnel, in connection with a sensitive phonograph, that the words will be recorded as they fall from the speaker; but, of course, this is not practicable in miscellaneous work where a number of persons participate in a discussion, or in the proceedings of a court.

Every experienced shorthand reporter will appreciate the great boon the phonograph is to the shorthand profession; and persons contemplating the study of shorthand will do well to investigate modern improvements before proceeding.

Of course, all that has been said as to verbatim reporting applies with greater force to office amanuensis work. If the principal does not care to dictate directly to the phonograph, his clerk may repeat the dictation for him. This renders a knowledge of shorthand on the part of the clerk useless, as, without any such knowledge, he will be able to serve his employer as well in this respect as though he were a stenographer of the highest skill and salary.

The world is producing 1,000,000 pounds of silk a year.

What the Phonograph Companies Have Done During the Past Year—Giant Strides Made in the Introduction of the Phonograph.

It will be of interest to all connected with the enterprise represented by this magazine, to take a look backward and bring up before the minds' eye the career of this great industry during the past year.

The second annual convention of the local phonograph companies of the United States was held in New York on the 16th, 17th, 18th of June, 1891, for the purpose of discussing and promoting the interests of the phonograph.

This meeting was productive of much benefit to the association. It had representatives from the North, South, East and West. Discussions were held as to the merits of new coin-in-the-slot machine, automatic in action and easy of adjustment, which were exhibited for the first time at this convention. New cylinders were also shown, and passed upon, and the storage and primary battery question was thoroughly discussed. The long-sought-for improvements in these batteries were conspicuous by their absence, but some very interesting and practical facts were given by Mr. A. O. Tate in a careful address before the convention in connection with the use of primary and storage batteries, and among other excellent remarks, he said:

"The power that is used to drive the phonograph must in the first place be reasonably economical; it must next be constant, and the next qualification which it should have is long life.

"I think it would be an excellent idea if all the phonograph companies should adopt a standard battery. It does not matter which battery it is. There is no class of work which is so expensive as experimental work, and I think the battery companies have been doing a great deal of

experimental work in primary batteries. I think if this convention would appoint a committee on batteries and refer all questions relating to that subject to the local companies to abide by their decision, it would make a great step in the right direction."

We find no striking improvement to report in this direction since the convention adjourned. The primary battery has several exponents all of whom have cells with points of excellence, and the storage battery suits seem to have been brought to a close by the decision of Judge Coxe in the case of Mr. Brush against the Accumulator Company, this, following a similar decision during the previous year giving Mr. Brush pretty thorough control of the lead battery. In New York, the Gibson, "Julien" (now the Consolidated Storage Battery), and the Edison Lalande (primary), manufactured by the Edison Co., are all used, while among the local companies the Taylor Primary is looming up into importance in phonographic work, and also many storage batteries are being tested, the Anglo-American taking the lead as the favorite.

Reports from the local companies give great encouragement. The Columbia Phonograph Co., controlling the District of Columbia, Maryland and Delaware, has pressed with vigor the commercial phonograph until now the phonograph is to be found in every department of the United States Government, and in the offices of the leading business men, while during the last session of Congress about sixty machines were in use in the capital. This company had out during one season one hundred and thirty-seven automatic phonographs. They have paid especial attention to the teaching of foreign languages by the phonograph and introducing language records throughout the country.

The New York Company, which holds perhaps the richest territory in a com-

mercial aspect, has profited greatly by its systematic way of conducting business, and at the end of the year reports largely increased profits from its coin-in-the-slot phonographs, besides a great activity among its local agents, distributed at the most important points in the State. The commercial, coin-in-the-slot, and exhibition departments of its immense business has been thoroughly developed, while a no less important feature is the school for imparting a knowledge of the phonograph to typewriter pupils.

This company with keen insight is placing trained operators with the phonographs in many of the large offices of the city, and again makes a specialty of conducting exhibitions of the practical working of the phonograph in many of the largest office buildings on lower Broadway and Wall street.

The Western Pennsylvania Phonograph Company with its usual enterprise, is not one whit behind in introducing the phonograph, and we see it beginning the new year with its books balanced on the right side of the ledger.

It is a wide-awake company, who, with unusual foresight, has gone ahead with steady nerves and unyielding resolution to make the machine that talks a "go," and it has well accomplished this, if reports from its patrons are true.

At fairs, big returns were taken in last Fall; the phonograph is to-day side by side with the typewriter in many of the commercial houses, in schools, libraries, in all public resorts, wherever you turn, you are confronted with the phonograph, until it would be impossible to forget its existence, be one ever so much inclined to do so.

And again, what does the New England Company tell us? "In the year that has just closed the New England Co. has reason to be proud of its record." It has out over one hundred and fifty machines.

Since the sale system, of which it has availed itself, it has sold one hundred machines, which have gone the length and breadth of New England. This sale system has been of immense benefit to this company, keeping up a constant market for supplies besides advertising still further the phonograph. Out of this number only *three machines have so far been returned for repair*. This is an immense endorsement for the phonograph and also the sale system, as the New England Co. concludes that the purchaser takes better care of his purchase than when renting.

This company also makes some fine band records and has had a very active business accruing from this source.

The Missouri Phonograph Company is also prospering. It has leased a large number of commercial machines, has placed a large number of slot machines in various parts of the country, and has adopted a policy which while dissimilar to the other companies it considers a superior method.

The Louisiana Company has met with success from the start, its especial attention being turned towards the coin-in-the-slot machine. This has been introduced into the territory of Louisiana with great profit, it has made no mistakes and is therefore one of the most prosperous companies. It has pushed to advantage the commercial machines and has its factories, musical rooms and warerooms all conveniently located for turning out large supplies of musical records beside competent repairers to examine and keep all mechanism in perfect working order.

The Kentucky Company is also looming up, and we now see Mr. Geo. W. Grant, its general manager, also invested with the right and authority to control the State of Tennessee, a territorial right recently leased to this company where the field is most lucrative.

We have here enumerated a few of the active companies in this great organization. There are many others as prominent and whose books show as large profits, and with the efficient aid of Mr. Insull, now elected president of the North American Company and the new Board of Directors, the enterprise will receive an impetus that will send it forward to still greater success.

The Phonograph to be Used in Teaching Deaf Mutes Speech.

Superintendent Johnson, of the Deaf and Dumb Institution in Indianapolis, has been making some experiments lately with the phonograph and believes that in connection with it he can teach the majority of deaf mutes under his care to speak. He finds that the instrument concentrates the sound at the drum of the ear in such a way that many of the pupils, otherwise deaf, are enabled to hear.

He experimented with the phonograph on twenty-seven boys and twenty-nine girls. Of these, only three girls were unable to hear anything at all. Twenty boys and twenty girls could hear instrumental music, while eleven boys and fifteen girls could distinguish spoken words.

Of the fifty-six whose hearing was tested by placing the phonograph tubes in their ears, twenty-eight could hear best with the left ear and fourteen with the right, while eleven heard alike with both.

These experiments will mark a revolution in the deaf and dumb asylums of the world and will bring solace and comfort to the large class of afflicted ones who before the advent of this remarkable instrument were cut off from many of the enjoyments of life.

The Voice of the Dead.

Mr. W. H. Boblits, the leading stenographic reporter of Baltimore, Md., and a user of phonographs in his business from the beginning, died suddenly last month. He left a number of untranscribed cylinders, which have been written out since his death. The feelings of his clerks, who thus wrote from the dictation of their dead employer, hearing his veritable voice, although he was no more, can better be imagined than described. Mr. A. Johns, the well-known Washington stenographer, and Mr. R. F. Cromelin, the secretary of the Columbia Phonograph Company, both of whom were well acquainted, for years, with Mr. Boblits, have been presented by Mrs. Boblits with some of the records her husband left.

THE LOUISIANA PHONOGRAPH COMPANY, LIMITED.



results of our work may not be uninteresting.

Looking over the most vitally interesting statistics of the company's condition, namely, the cash receipts, we find the largest receipts from any one source are from direct exhibition in the city of New Orleans, and, of these exhibition receipts the larger part is from "automatic" work. This is largely due to the favorable field New Orleans offers for such work, but principally to the way in which it has been managed.

The company began its operations with the conviction that the phonograph was a legitimate and attractive source of amusement, and one that, properly maintained, need not lose its hold upon public favor, and accordingly it was decided that comparatively few machines should be placed in the city on public exhibition—that all music used, should be first-class and sufficiently varied, and that such a close watch should be kept upon the machines that the disgust and loss of prestige, consequent upon failure to operate, should be avoided.

It was intended at first to open a phonograph parlor, similar to that operated so successfully in the Cincinnati Arcade, by the Ohio Phonograph Co., but the utter impossibility of securing a suitable location made this impracticable, and it was therefore decided to place the automatic phonograph in the various suit-able busi-

ness establishments of the city. In accordance with the general plan of work, it was settled that, not only would no percentages be paid to the proprietors of such places, but that no machine would be put in any place unless the proprietor would agree to see that it was not abused or used improperly in the absence of the company's inspectors. On the other hand, the company agreed to get the machines up in attractive shape, to keep them in first-class condition, and to change the selections upon the machines daily.

Under these regulations over one hundred applications for machines were received by the company, coming from the best and most desirable places in the city, where the phonograph was wanted as an attraction and an amusement for patrons.

The first machine was put out in the early part of March in Eugene May's Palace Drug Store on Canal street. This is one of the handsomest and most ornate drug stores in the country, having the finest fountain and the best soda trade in the city, and its selection for the initiation of the exhibition business was very fortunate. The machine made an instantaneous hit, and the results were very surprising. Week after week the machine worked steadily almost day and night, and the receipts from this one machine, for its first three months, averaged over fifteen dollars per day.

This machine was rapidly followed by others, and while it was the most successful machine placed in the city, the receipts from all were most encouraging and well sustained.

These results were not obtained, however, without the closest care and attention. Thoroughly competent inspectors were provided, and one was assigned to every eight or ten machines. Nothing was required of the inspector but to at-

tend to his own special machines, and for the condition and receipts from these machines he was held strictly responsible. The busiest machines were visited daily from ten to twelve times, and all were most closely watched. The music was changed regularly every day, and unless in thoroughly first-class condition was not used again, but was placed among the second-grade records and sold for general use at a reduced rate.

As a result of this system, the automatic business is still, while not producing anything like its first bountiful harvest, well maintained and profitable.

Outside of the automatic work, the principal exhibition receipts have been from the West End, the great summer resort of New Orleans. Here during the heated months the people of New Orleans flock every evening to listen to the strains of a first-class band, enjoy the cool breezes from Lake Pontchartrain, and hear the phonograph. Here the parlor idea was carried out with most excellent results. Twelve machines were placed in a suitable building, in the form of an oval, facing outwardly, the distances between the machines being barely large enough to allow the passage of the inspector. Inside this oval was stationed the inspector who attended the machines, made change and had general charge of the exhibit. As most of the work was done after nightfall, each machine was provided with a small electric lamp, fed by storage batteries. These lamps were placed inside of the cabinets and served a double purpose. They lighted the interior of the cases, enabling the inspector to look after the machines more efficiently, and also permitted the patrons to enjoy the interesting and attractive sight of the phonograph at its work; and still further, the lights served most efficiently as an advertisement, drawing people from all over the grounds.

During the entire season, these phonographs afforded a never-failing source of interest to the visitors to the West End, and what was more to the point, a steady source of income to the company. The same principles, as carried out in the city, were observed here—close attention, first-class music, eternal vigilance, and with the same success.

All of this exhibition work in the city has been under the direct control of the company, as, in no other way could the desired standard be maintained. Outside of the city, however, the company has attempted nothing in the line of exhibition, preferring to lease to outside parties for this purpose. Here, however, the policy was pursued of restricting territory. No traveling exhibitors whatsoever were commissioned, and in a majority of cases limited territory has been leased to local parties, as in this way better results are secured for both the company and the exhibitor than in almost any other way. Some twenty-five machines have been leased for this purpose in the country, and the report from these exhibitors is, in almost every instance, encouraging.

In keeping up the standard and variety of its music, the Louisiana Phonograph Co. has obtained records from almost every part of the country, and has, in addition, taken a very large amount of local music. New Orleans is perhaps the most generally musical city of our country and its musicians are very fine. In addition to all kinds of instrumental and vocal music, the company has gotten out a line of negro specialties, of great popularity, consisting of old plantation songs, darkey melodies, etc. Probably the most successful specialty is the work of "Brudder Rasmus," whose sermons, such as "Charity ob de Heart," "Adam and Eve and de Winter Apple," "Sinners, Chicken Stealers, Etc.," and "De Lottrey," with the char-

acteristic participation of his congregation, are wonderfully realistic and attractive.

In the line of business work, the progress has been very slow. Only a limited number of machines has been put out for this purpose, but the company has the satisfaction of knowing that every machine that has been so placed is doing thoroughly first class work, and is giving the phonograph a standing which cannot fail to help it materially hereafter. As in most other places, there is in New Orleans a considerable opposition to the phonograph, from the stenographers. This arises largely from a misapprehension of the scope of the phonograph, but it exists however, and can only be overcome by time and patience.

The company has also put out a number of machines in the city of New Orleans for social use and for home amusement, and this branch of the business is also one that promises a considerable increase. For the coming year the company expects to pursue the same policy it has during the past year, pushing especially the business and social uses of the machines.

NEW YORK PHONOGRAPH CO.,
257 Fifth avenue,
NEW YORK, January 14, 1892.

To the Editor of the PHONOGRAM.

DEAR SIR:—I send you herewith, as requested, a cut taken from a photograph of one of the original phonographs, which I own. This instrument is on exhibition at the warerooms of New York Phonograph Co. The original tin foil cylinders or wrappers, with the curious dotted records upon them, are also preserved in their original condition.

Yours very truly,

RICHARD TOWNLEY HAINES,
Secretary.

A New Way to Use the Phonograph for the Entertainment of Your Children.

A Washington father has invented a new game which he and the phonograph play, to the great delight of his children. He makes a record, in a loud tone, on the phonograph, of the part he wishes the phonograph to take in this dialogue, leaving appropriate blanks for his own part. The dialogue runs something like this: Addressing the phonograph, which has a horn on, he says: "Now, Phonograph, I want you to sing 'Johnny Smoker' for the children." The phonograph immediately responds, "No, I won't." Then the dialogue runs:

"What; you will not?"

The Phonograph: "No, I will not!"

"Then I shall have to whip you. You are a bad boy."

The Phonograph: "No; I'm not a bad boy. I'm a good boy."

"I see I shall have to punish you."

The Phonograph: "If you do, I'll cry!"

"I don't care if you do cry; I must whip you." (Pretends to whip the phonograph.)

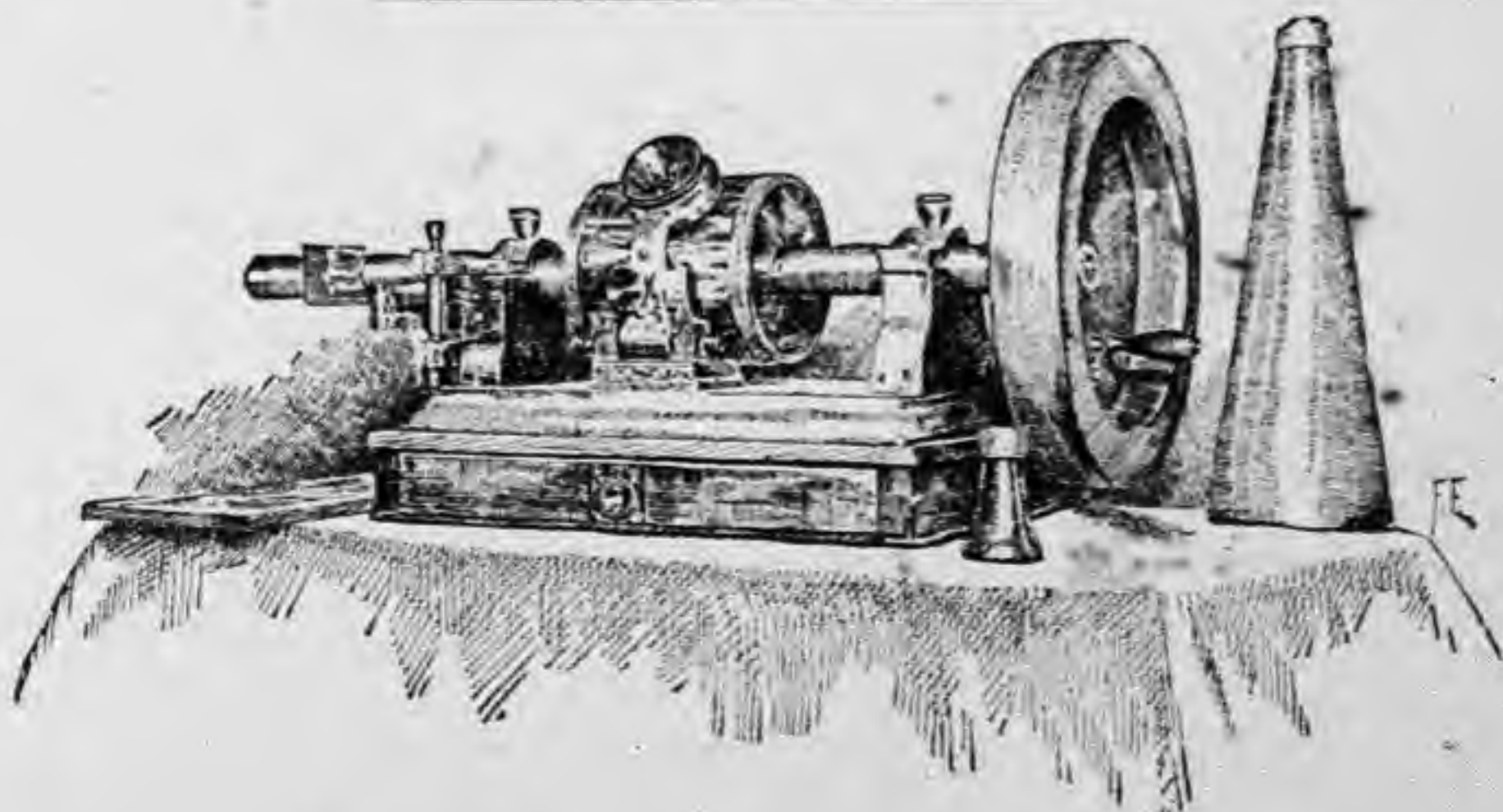
The Phonograph: "Boo-hoo, a-a-a-a-a-Boo-hoo-hoo-hoo!"

"Will you sing now?"

"Yes; if you'll stop whipping me I'll sing."

"All right; go ahead and sing."

Thereupon the phonograph sings "Johnny Smoker" in a loud tone, and the children laugh and scream with delight.



NO LONGER A TOY.

BUFFALO FIRMS WHICH USE IT.



"It is needless to say that the phonograph at the present time is gaining ground and increasing in popularity more rapidly than any other invention now before the public.

"If anyone has doubt of the utility of the machine for business purposes all that is needed to convince them that such is not the case, is an interview with any one of the thousands of business men now using the phonograph. Most of these men would think as soon of parting with their best stenographer or with any man essential to their business, as of parting with their phonograph."

Thus speaks the Buffalo *Enquirer* after an interview with the energetic local agent of the New York Phonograph Co., Mr. H. D. Pulsifer, whose portrait accompanies this article.

Mr. Pulsifer is a thorough electrician and phonograph expert and is busy day and night putting in new machines and repairing old ones.

He says, "The growth of this business

has been marvelous. I have been connected with the phonograph business in Buffalo for the past four years, and in that time have put in thousands of machines. I cannot give the exact number now in use but it is much larger than most people suppose.

"At the present time, I am putting in about eighteen machines a month, or, in fact, as many as the company can spare me. Every machine I sell is made under the supervision of Thomas A. Edison, at his factory at Orange, N. J. By selling these machines I do not mean that we give the phonograph for a certain amount of money. No we don't sell them, literally speaking. We just rent them. We have the right of taking these machines from anyone who does not keep to the letter of his lease.

"We cannot give here the names of all our customers, but we will give you some of the most prominent ones who are using the phonograph and say they would not be without it. They are, G. H. Dunstan, The Buffalo Specialty Manufacturing Co., Buffalo Spring and Gear Works, Empire State Wagon Co., and last but by no means least, The World's Dispensary Medical Association and the Delaware & Hudson Canal and Railroad Co.

"When the phonograph was first introduced in this city business men looked upon it as an expense and a luxury only to be indulged in by those who were 'well heeled' as the expression goes, but to-day it is regarded as I said before, in the way of a necessity. The number now in use among business houses is four times as large as it was a year ago, and the outlook is that in another year the business will be quadrupled."

Anyone can learn in one half hour's

conversation with Mr. Pulsifer more about the recording of sound and the proper articulation of speech, than from all the grammars and books on syntax ever published in our own or any foreign language. The phonograph is a whole kindergarten in itself.

Catching the Remarks of the Departed at a Spiritual Seance.

Spirits that hover about seances in Washington are up to the times. They have demanded phonographs or "talking-machines" to assist them in their work, and the earthly beings who attend to their wants have provided them. "The touch of a hand that is vanished and the sound of a voice that is still." That is a part of a message or address recorded on a phonograph cylinder by an apparition claiming to be the materialized spirit of the late lamented John King, pirate. Mr. King's head appeared at an aperture in a dark screen. The room was dimly lighted. The phonograph was outside of the screen, and the horn or sound receiver extended up so that it just touched the edge of the aperture. Mr. Cromelin, the secretary of the Columbia Phonograph Company, was outside of the screen, and operated the little lever of the phonograph so as to set it going or to stop it to suit Mr. King's convenience. There was objection to Mr. Cromelin's going behind the screen as it might have a bad effect on the manifestations. This all occurred in a house on I street, where two spirit mediums were doing business in the usual way. Mr. Cromelin was there with his phonograph last night and on the two nights previous. A *Star* reporter to-day listened to the voice of the pirate King as it was reproduced by the phonograph. It was somewhat sepulchral, an extra graveyard twang being given to it by the japanned tin horn through which it escaped out of the phonograph. John King's voice was not the only one thus im-

prisoned. There was an address by Mr. Washington Emmons, who, according to his own statement, had no palate in life and has not succeeded in picking up one yet in the after life. So a good many of Mr. Emmon's remarks consist of rather unintelligible gutturals. Others of the cheerful circle of spirits that have given their time toward making the I street seances interesting also spoke. The mechanical arrangement was the same in each case as in the case of John King. Some of the voices are recorded with marvelous distinctness. The messages are all about on the same level as the usual spirit message. One spirit said it was like talking into an empty barrel to speak into the phonograph horn. The phonograph experiment was tried because the spirits themselves, according to the statements made to the *Star* reporter, clamored for it. One spirit, much interested in the proceedings, claimed to be the immortal essence of Christy, the minstrel. Christy proposes to drum for the phonograph and make a record of what is considered a wonderful performance even for a spirit—the beating of a rapid tattoo in perfect time with light sticks made by splitting a clothespin. This would have been done last night, probably, but Christy was in a hurry to get away from the performance in order to see a sparring match at one of the theaters. He keeps up his interest in these things.

The Olfactometer.

An invention called the olfactometer for testing the smelling capacities of individuals, was recently exhibited in Paris. It is said to determine weight of odorous vapor existing in a given quantity of air.

The development of the industries of the South is shown in the fact that it now has 1,200,000 more spindles than it had eleven years ago.

The Phonograph in the National Capital.

A good indication of the prominence of the phonograph in Washington is shown by the numerous advertisements appearing in the daily papers on the subject. Business colleges advertise instruction in the use of the phonograph; language teachers notify the public that by the use of the phonograph greater progress can now be made in the acquirement of foreign languages than was ever before possible; while under the head of "Help Wanted" persons who can write rapidly on the typewriter from phonograph dictation are always in demand.

The following item is taken from the *Washington Star* of January 16th:

"Maryland's new Governor, Frank Brown, spent his second day of office in a whirl of congratulatory visits and greetings at Annapolis yesterday, broken by an interval of an hour, during which he applied himself to the mastery of his new phonograph, which arrived at an opportune moment, as the Governor's stenographer is in his bed with an attack of the gripe."

The *United States Government Advertiser*, of December 18, 1891, says:

"Washington is well known as a progressive city, and it may not surprise some of our readers to learn that in the introduction of the Edison Phonograph it stands at the head. More phonographs are in practical use in Washington than in any other city in the country, not excepting New York. Phonographs are to be found in every department of the U. S. Government, and in the offices of the leading business men, as an economical substitute for the stenographer; while they are also in the homes of well-to-do citizens, who thus obtain entertainment of the highest order."

The father of Princess Mary of Teck, known on account of his impecuniosity, was once irreverently called the Duke of Tick.

Reporters vs. The Phonograph.

A proposition has been made in the Senate of Brazil to use a phonograph for recording and reporting the speeches of its members, and thus dispense with the services of short-hand reporters. Certain statesmen opposed the projected measure upon the ground of the disadvantageous effect produced by presenting to the public the occasional undigested and crude utterances reflected by this frank and impartial instrument. The majority of the members would, of course, profit by retaining reporters, whose friendly offices in reconstructing their faulty periods they fully appreciate; while on the other hand their constituents might desire the exact reproduction of the matter delivered by their representatives as conveyed by the phonograph. The question lies, therefore, between the living and the inanimate instrumentality.

A Pleasant Surprise.

At the close of business, December 24, 1891, the employers of the New England Phonograph Company waited on Col. A. N. Sampson, general manager, and as a testimonial of their regard for him presented him with a very handsome office chair, with their best wishes and many Merry Christmases. Although completely surprised, the genial general manager warmly returned his hearty thanks at the expression of good feeling between employer and employes.

Fast Reporting.

The representative of a paper at Tewkesbury, England, had to transmit by telephone to Cheltenham a report of 700 words. This was done and the message received in three minutes. This was at the rate of 233 words a minute; anyone who has tried to speak 200 words a minute will appreciate this feat.]

The Wonders of the XIXth Century.



If the simple perusal of a summary of Mr. Edison's inventions tires an ordinary brain, what effect must the contemplation and study of the properties of those mighty and mysterious agencies with which he ceaselessly deals, exercise upon the cerebral organs of the great master of electricity himself? But we are reassured by a recent photograph of this "inventive phenomenon" which bears witness to the fact that his physical proportions are on the increase, and his continual additions to the list of new discoveries and mechanical appliances show him to be mentally in a perfect condition. When it is remembered that each effort of that brain is directed to the solution of some problem designed for man's benefit, we recall the thought of a great poet which conveys the idea that in contemplating the vast and sublime the mind expands and grows loftier.*

It is certain that Mr. Edison is neither an avaricious man nor a sybarite, as his moderate style of living evinces. In what favorable contradistinction does this useful and beneficent life appear, when de-

picted alongside of Alexander's or Caesar's or Napoleon's—symbolic alone of cruelty, revenge and selfish ambition!

Like all scientists and philosophers, Mr. Edison's mind is not "cabined, cribbed, confined" to one train of thought or study, but lays hold on the universe as his sphere of investigation. Therefore when the reporter of the *New York World* suggested a new field for the exercise of his inventive powers by mentioning the reward offered for the extermination of rabbits in Australia, the sage got ahead of him by stating that as there were many wire fences down there, the construction of a machine for that purpose was unnecessary; also, that rabbits in Australian regions grew hooked toes to climb over the fences.

Approached on the subject of engines of war, Mr. E. made the following statement: In the event of an invasion, I would place twenty-five men in a fort, with an alternating machine of twenty thousand (20,000) volts capacity. One wire would be grounded. A man would govern a stream of water of about four hundred pounds pressure to the square inch, with which the alternating current would be connected. The man would simply move this stream of water back and forth with his hand, playing on the enemy as they advanced and mowing them down with absolute precision. Every man touched by the water would complete the circuit, get the full force of the alternating current and never know what had happened to him.

At the request of an interviewer Mr. Edison wrote the following list of inventions and the profits they had brought him:

District Telegraph—"Of that I am one-half inventor."

Quadruplex System of Telegraphy—"That is my invention."

* See Byron's *Child Harold*.

Stock Ticker—"Of that I am one-half inventor."

Telephone—"One-half my invention."

Electric Pen and Mimeograph—"My invention."

Incandescent Lighting System—"My invention."

Electric Railroad—"I am one of the inventors of that."

Phonograph—"My invention."

The district messenger service amounts to about \$4,800,000, paying five per cent.

The quadruplex system of telegraphy was sold sixteen years ago to the Western Union for \$30,000. The wires of this system alone are worth \$10,800,000.

The stock ticker represents an investment of \$8,000,000, paying five per cent a year. From that I have received \$50,000, but spent \$60,000, in getting it up.

For the telephone I got about \$102,000 in all; in that machine Bell invented the receiver, which is the end of the telephone that you put to your ear.

He tried to use that as a transmitter but could not make the thing go; therefore it did not pay. I invented the carbon transmitter which made the telephone a financial success. There are at least one million telephones in use in the world—they pay \$50,000,000 a year rental. They represent an investment of at least \$100,000,000, capitalized at twice that sum, and paying \$10,000,000 a year profit. I probably realized \$25,000, in clear profit. Bell made half a million.

The profits on my electric pen and mimeograph are not large.

My incandescent light system represents a hundred millions of cold cash. Taking all the companies together, this is capitalized at about two hundred millions, paying from four to twenty per cent a year. The electric railway I sold out long ago.

The phonograph is a new thing; it will be greater than the telephone. It took twelve years to pioneer the typewriter. One thing I shall make money from—the magnetic concentration of iron ores in New Jersey. That will return three millions a year, some six or eight years hence.

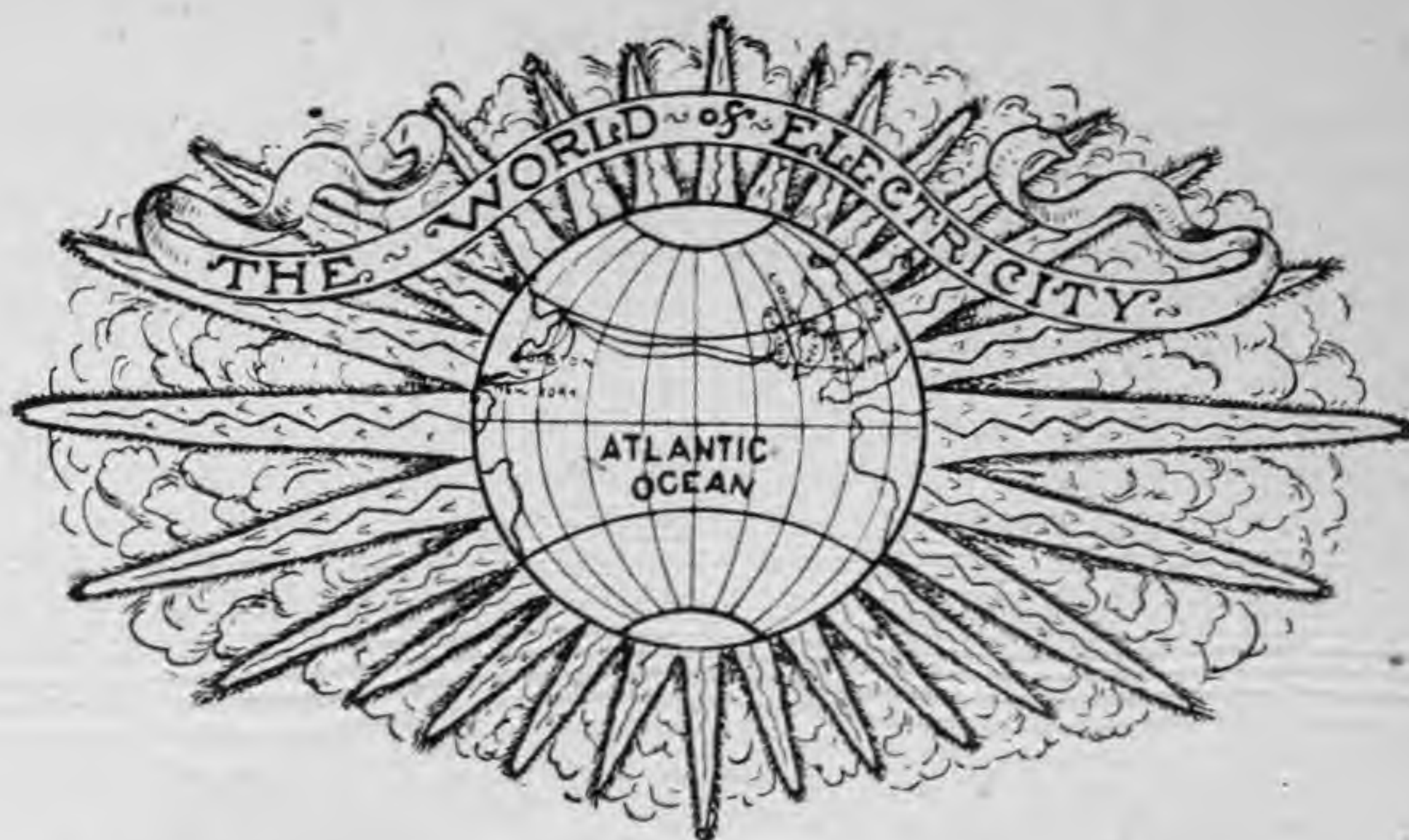
The Phonograph to Aid in Establishing the Darwinian Theory.

Prof. Garner is on the eve of departure for the equatorial region of the West coast of Africa, where he intends to obtain, if possible, the law and meaning of the sound uttered by the gorilla.

Mr. Garner believes that human beings can learn a good deal of the ape and monkey language and he has already learned some curious things relating to the meaning of the various expressions by the monkeys in confinement to whom he has listened in the zoological collections in the different cities he has visited. Mr. Garner concludes by saying, "On the whole, I am convinced that all animals possess a form of speech which is commensurate with their social and mental development; that man may master it so as to enable him to learn their wants and understand their emotions; that they are as far advanced in language as they are in thought; that they make voluntary sounds with fixed values, designed to convey certain ideas, and that they are understood and obeyed by others of the same species; that the rudiments of their speech are similar to those of man, and are such as may be easily developed into human speech; that their mode of speech is as near to human speech as they themselves are mentally, morally and socially; that the hiatus that separates them from man in speech is equal to that which separates them physically; that they are capable of developing into higher and more definite types of speech; that modes of thought formulate the modes of speech, and all speech is vague or definite as the thoughts are vague or definite, that all voluntary sounds intended to convey thought are integrals of speech; that speech is as necessarily the product of thought as salt is of chlorine and sodium; that speech is materialized thought; that speech is the body of which thought is the soul.

I feel quite justified in stating that types of speech vary among Simians as much as their physical types vary, and the same is true throughout the whole range of life.

Mr. Garner will take with him several phonographs and a gross of cylinders on which he expects to imprint the whole Simian language.



THE LUMINOUS TROUVÉ FOUNTAINS FOR HOME DECORATION.

THE luminous fountains of the Champ-de-Mars were undoubtedly one of the principal attractions offered by the Universal Exposition of 1889 to its visitors, and they justly excited the admiration of all who saw them in operation.

To enjoy this superb spectacle it was necessary to endure long hours of waiting and submit to the jostling of the crowd. Mr. Trouvé has sought to realize and succeeded in inventing a reduced model of the luminous fountain, easy to construct and place upon a table in the dining or reception rooms of a house.

The following description is that given by the inventor in his communication to the Academy of Sciences.

The reservoir of water is a circular metallic vase forming the base of the apparatus, says *L'Electricien* : It is surrounded by a rim or border of gilt bronze. The lower portion of the vase, slightly concave and conic, is pierced in its center with an orifice

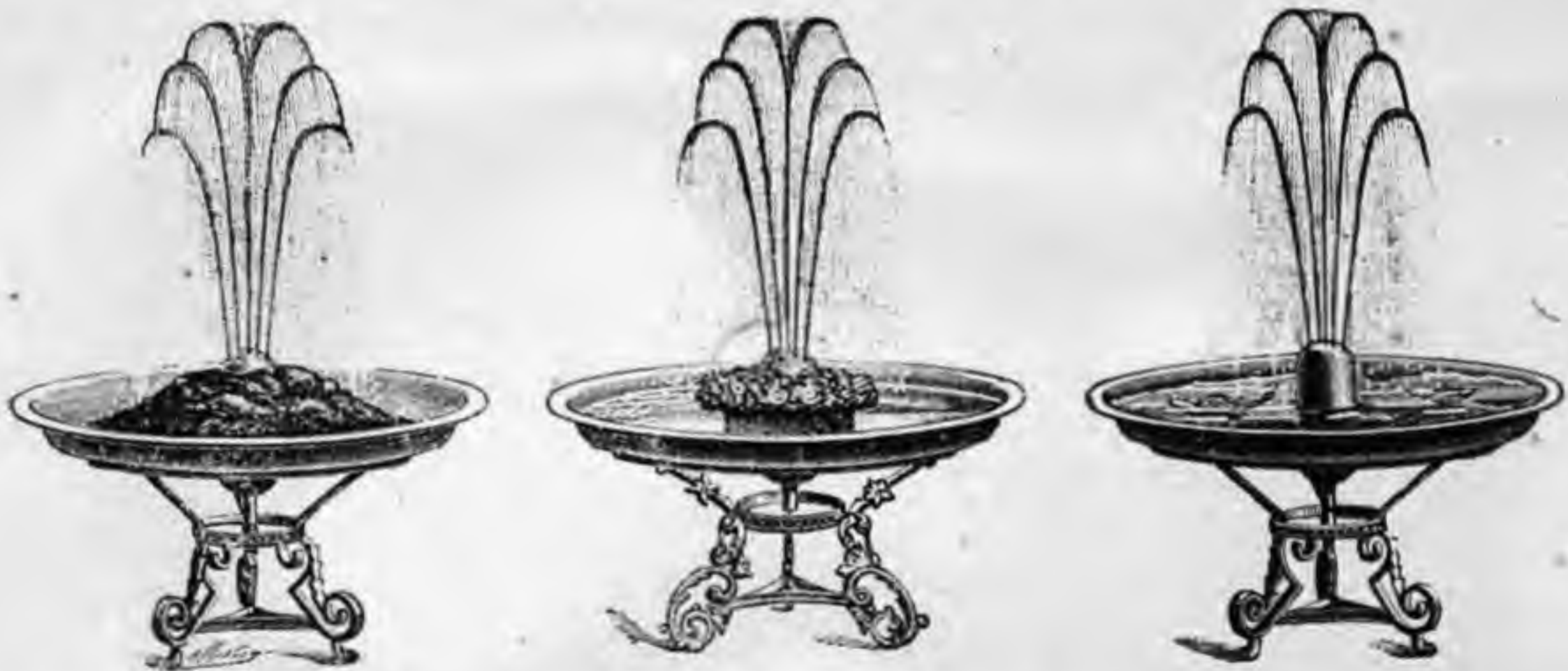
that serves for the introduction of the water and that may be closed either with a cork



stopper or a screw. A copper tube runs from the bottom of the reservoir and passes to the upper extremity and as far as the surface of the water, while the opposite extremity communicates with a rubber bulb that is managed with the hand or with the foot. The water of the reservoir, compressed by the action of the bulb, rises by a copper tube which traverses the upper part of the vase and opens into a bell-glass pierced with vertical holes, through which it spouts freely. The height of the jet is of course in proportion to the compression. An elegant basin surmounts the reservoir

aid of small accumulators as well as by the current of an appropriate pile, or even by the ordinary light circuit, if one is connected with an electric station. A commutator placed within reach of the hand permits the lamp to be lit or extinguished at will.

For cabinets of natural philosophy there has been constructed a model where all the organs were rendered visible. Fig. 2 represents three of these fountains of identical construction, but of different aspects; one shows a rock and the second a basket of flowers; by removing these accessories



and receives the water that returns. When all the water contained in the apparatus has passed into the basin it suffices to uncork the return pipe and the water enters the reservoir. The same water serves the purpose designated, indefinitely.

The apparatus for lighting allows an incandescent lamp whose lighting power is proportioned to the dimensions of the fountain. It is fixed to the focus of a parabolic reflector whose axis coincides with that of the liquid spout directly lighted. A rotary or sliding screen, formed of parti-colored glass is placed between the lamp and the liquid spout. A solution of fluoresceine renders the experiment very brilliant.

The incandescent lamp can be fed by the

the basin can be transformed into an aquarium by placing in it small fish.

As ornaments for a dinner table nothing is more easy than to set up two of these fountains, one at each extremity of the table, and to feed them by a little battery of piles or accumulators. As this model of luminous fountain can be constructed equally well in large dimensions, it is easily seen how they may be used for the decoration of apartments. It would be easy to feed it with water under pressure like that of the city of Paris, taking care to add to the apparatus an escape pipe.

More than one and one-half million pounds of steel and iron will enter into the construction of the Mines and Mining Building.

Africa Will Soon be Furnished With an Electrical System.

Mr. William Malcolm, of Cape Town, South Africa, has been seeking information from the merchants and manufacturers of Philadelphia, with regard to dynamos, motors, storage batteries and various methods of electrical locomotion, and will compile statistics thus acquired to present to the syndicate he represents, who contemplate introducing an electrical system into South Africa.

Cape Town is lighted by gas, which is supplied in limited quantity, leaving the town at many points in partial darkness. It is the intention of certain residents to secure electric lighting, which will score marked improvement in more ways than one, for South Africa.

The methods hitherto employed in that continent are not altogether equal to those used in America, hence when Mr. Malcolm's plans are laid before the committee charged with the direction of this enterprise, its members will perceive the superiority of American apparatus and eagerly acquiesce in adopting it; and this means not alone the acquisition of better, but of cheaper lighting. Hitherto, Africa has been indebted to the Germans for electrical goods, and she has obtained them at exorbitant prices. In the words of Molière she will ere long exclaim "nous avons changé tout cela."

Speculators Duly Rewarded.

Fully appreciating the value of caoutchouc (popular name—"India rubber") certain energetic and venturesome spirits undertook about ten years ago to form a syndicate of caoutchouc in like manner as that of copper had been constituted. The result was an immediate increase of prices to such a pitch that Americans preferred selling out their stock rather than submit to the extortion.

Since that epoch, the American consumption alone of this product has been raised from 6,000 to 10,000 tons. Consequently, the initiator of the syndicate of

1883, a Mr. Vianna, has recommenced his efforts, his associates aiding him, and has secured a sum of fifty millions of francs (ten million dollars), have bought three millions of kilogrammes (about six million pounds) of caoutchouc and doubled the price of it. Allured by this success they have sought to double their capital, and to monopolize the crop of 1891 and that of 1892; but their negotiations have not succeeded, and they have been obliged to sell at a loss of about twelve millions of francs.

Search-Light Police.

The English journals mention a new and curious application of the electric light. Some game-keepers conceived the idea of watching the territory confided to their vigilance by means of an electric projector, whose luminous gleams they would throw intermittently over the country. They recognized at a distance of many miles, two men who were dragging a net. Upon the description given by them, the two miserable poachers were arrested and condemned to severe penalties.

Would it not be possible, add the journals that report the fact, to install powerful flash-lights, on the summit of edifices in cities, and thus keep watch on the thieves and other despisers of social order to obtain descriptions of them, and finally cause them to fall into the hands of policemen and others charged with—

"Defending the fields and town
From theft and iniquity."

Happy suggestion! the criminals will tremble. Let us hope for a considerable abatement of crime.

Electro-Optical Telegraphy.

There has been invented in London, says the *Review Scientifique*, by Mr. G. Kelway, a sort of optical telegraphy carried on by electricity. It consists of lamps, each representing a letter or cipher agreed upon and lighted or extinguished by "*un jeu de touches*." The inventor believes that this apparatus will render great service at sea, particularly in permitting ships to correspond with one another or with the coast. This idea came up with the invention of the incandescent lamp.



Setting Type by Telephone.



LEVER methods are often adopted in the management of the London *Times*' printing. Wires from the *Times*' composing-room now run through a tunnel to the Parliamentary reporter's gallery, in the House of Commons. The *Times* building is a mile and a half distant in Printing House Square, and in this place the compositors take on typesetting machines from a copy reader (one of whom is placed at each telephone), the stenographic "turns" from the note book as fast as it is possible. The hearing apparatus is fastened to the ear of the compositor in the same manner as in our "Central" telephone offices, and the reader himself must constantly listen for the interruptions and necessary repetitions. The uproar in the regular reporters' room in the house has driven a great many readers into other parts of the building. Hence, upon almost any night during the session of Parliament, one may witness the novel spectacle of duel debates in and out of the Chamber—the M. P.'s

and the readers—and it is no hyperbole to say that the elocutionary odds are in favor of the latter.

At first the reporters did not approve of the innovation, but when the *Times* men found they could dictate their notes through to the composing-room, without the labor of transcribing them, they quickly availed themselves of the opportunity, though as a matter of necessity they receive proofs for correction. Each machine can produce from five to six columns of solid minion a night.

Of course errors creep in, but on the whole the scheme works well, and the fact that it enables the *Times* to print in time for the 5 A.M. newspaper trains going to all points of the United Kingdom the whole of debates that are often continued until 3 A.M., is an earnest of the plan's permanency.

Telephone Companies Are Common Carriers.

In the case of the Postal Telegraph Cable Co. vs. The Delaware and Atlantic Telephone and Telegraph Co., in the United States Circuit Court, this decision was rendered: That the same rules of law which apply to common carriers are applicable to telephone companies, and a telephone company operating under a public franchise, and offering the use of its system to the public at an established rate, is subject to the duty of serving all applicants alike, and it will not be permitted to refuse its facilities to any one complying with its gen-

eral regulations, or discriminate in favor of one or more subscribers as against others.

Transmission of Telephonic Messages at Long Distance.

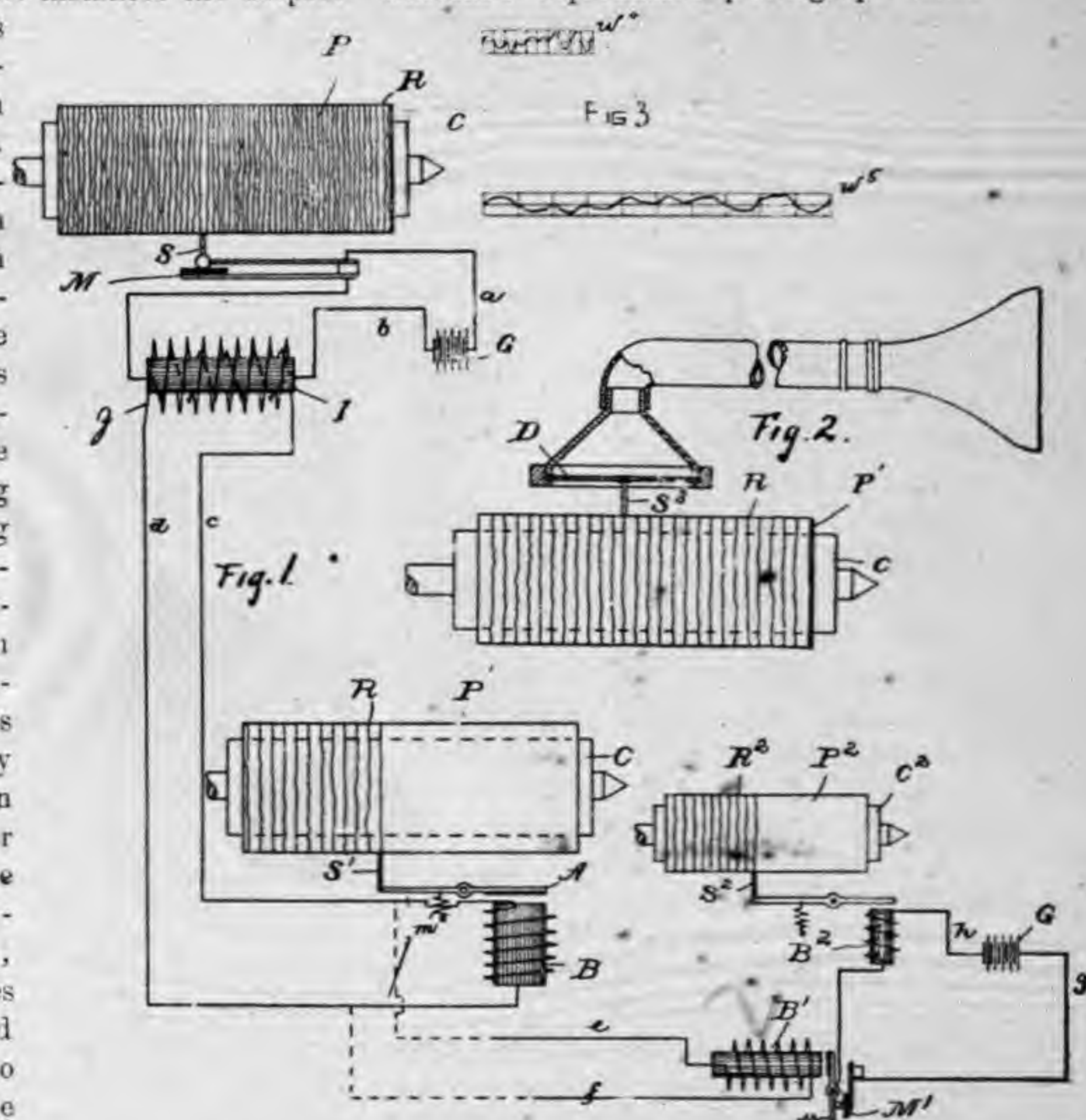
As fast as electrical appliances and devices are invented, the student or the amateur in electrical science will discover that in innumerable instances the helpful phonograph is brought into service to accomplish unattained ends. Sound waves developed by speech are short. With telephonic communication the limit of distance is caused by an impediment in the line connecting the transmitting and receiving station. The successful reproduction of speech at the receiving station is interfered with by the self-induction of even a copper circuit when the circuit is of considerable length, the several waves of different period being forced to overlap by the electrical inertia

of the line, which produces a commingling of sound waves entirely unintelligible.

To rectify this state of affairs the phonograph is introduced and the rationale of the proceeding is as follows: The speech is recorded upon the phonograph at the transmitting station and then used for transmitting at a much slower speed which gives the sound waves a longer period of

time for transmission over the line, when they are recorded at the receiving end upon a phonograph blank, which is next driven at greater speed so as to articulate the words in a phonographic receiver.

The inventor is Mr. John W. Gibhoney, of Lynn, Mass., and his ingenious system is explained in the diagrams subjoined, wherein *P* represents a phonograph blank



—By courtesy of the *Electrical Review*.

upon which a phonographic record has been made. This blank is mounted upon a spindle *c*, and operated at a much lower speed than that used for taking the record. It reacts upon a microphone *S* and sends induced waves of long period over the line *cd*, which at a distant station passes through a recording magnet *B*, or if desired it may be relayed, through a magnet *B'* and then

passed through a recording magnet B^2 , thus developing a record upon the phonograph blank P^1 corresponding to the record upon P . This phonograph blank is then removed from its spindle and applied to a phonograph driven at the same rate of speed as the one upon which the record P was made at the start.

In this way the receiver hears tones of the same pitch as those which made the original record. The manner in which the wave periods are lengthened by the system is illustrated in Fig. 3, wherein W^1 may be assumed to represent the sound waves spoken at the transmitting station, and W^2 may represent the sound waves as sent over the line. It will be seen that all the waves are of the same amplitude, their duration is considerably lengthened, so that they may be given time to overcome what impedes them in the line and reach the receiving station in substantially the same condition as when they left the transmitting station. It is stated by the inventor that the system may be found useful also, in cases where it is desired to transmit intelligence secretly over an electric circuit, because upon communication being established with the line surreptitiously instruments and appliances similar in nature to those used in this system would be necessary before the messages could be understood.

The Perfected Telephone.

The Boston News Bureau announces that the American Bell Telephone Co. has now in its possession a perfected telephone, by which whispers can be transmitted five hundred miles as distinctly as though that five hundred miles of wire were only five feet of space. Telephoning from Boston to San Francisco does not, therefore, seem an impossibility for the future.

The whole of the last edition of THE PHONOGRAM was exhausted within a week.

The Late Mr. Horace Ironmonger.

The demise of this esteemed and talented young gentleman whose career was so suddenly brought to an end at the close of the expiring year, has caused more than ordinary regret to a wide circle of friends outside of the immediate range of his family and relatives.

Advanced to a post of honor and responsibility as superintendent of con-



struction in the Queens County Power and Light Co., when only nineteen years of age, enjoying the respect of his associates in the Manhattan Athletic Club of New York and the Young Men's Christian Association of Brooklyn, he commanded a degree of esteem and consideration unusual for one of his age. His rectitude of character as well as his manliness commended him to all, while his affection and loyalty to his family made him the idol of home. His integrity and energy afford a shining example to all the youth of the community in which he was known.



THE EVOLUTION OF THE TYPEWRITER.

SOME novel features have lately been added to their machine by the Densmore Type-writer Co., one of which is a ribbon movement which moves the ribbon endwise as well as crosswise. This will be appreciated by stenographers. With the old style ribbon movement endwise the ribbon was worn out in the center only, and with the ribbon moving simply crosswise, the long part of the letters did not get fresh ink enough. In the new diagonal movement the objections to both the old ways are overcome.

A new typewriter, called the Williams, was used for the first time at Wells & Richardson Co.'s, in Burlington, Vt., recently.

The Williams is manufactured in Brooklyn, and the president of the company is W. E. Andrews, formerly of Waitsfield, Vermont. A. E. Richardson, of Burlington, is one of the directors and considerable stock is held in Burlington. The company is capitalized at \$300,000. The advantages of the new invention are that the alignment is perfect, and it can be easily car-

ried, as it is lightly but strongly made. The machine used is one of the first made. That it will be a success is almost assured.

The Standard Typewriter Co., of New York has been incorporated. Capital, \$500,000; directors, J. W. Halsey, H. D. Donnelly, F. Rudd and John N. Blair.

The Duplex Typewriter Company, after a large expenditure of money in getting up special machinery, etc., are now about ready to begin to push the sale of their machine. The outlook for this company is a bright one.

Soundings Made by the Government for Laying the Pacific Cable.

In a former number of this magazine we adverted to the submarine soundings then being prosecuted in the Pacific, and quoted the most striking features of those researches. The depth of that ocean in the Western portion is five miles, and this profound chasm extends all the length of the Asiatic coast as far as the Arctic Ocean.

To lay this cable will demand supreme effort, long continued, and the exercise of all the ingenuity of engineering talent to cope with the problems which the task presents.

New Weapons of Destruction.

It has been believed, up to the present year, that a network of steel would constitute perfect protection to ships against attacks from torpedoes.

But we now learn that Captain Wilson, of the English Navy, has invented a sort of scissors that may be fixed at the front of a torpedo boat, and which cutting the links of the net, clears the way for the terrible engine of destruction. According to recent experiments, the engine will operate in such a way that the speed of the torpedo will hardly be diminished.

Prize for a Primary Battery.

An Italian technical journal of Milan offers a prize of 2,000 francs for a new practical simple primary battery for industrial use. The competition will remain open from January 1st to August 31, 1892. The jury will be composed of responsible and competent persons. Here is a chance for some of our young expert electricians to acquire fame.

Electricity to Purify Water.

Mr. Meade Bache, of the American Philosophical Society, thinks that alimentary water (drinking water) can be sterilized by electricity. For this purpose he proposes to direct currents of a tension of many thousand volts across the feed pipes. The violence of the attack will compensate for its shortness of duration, and destroy all the microorganisms which thus receive a shock on the moment of their passage.

Physics.

Mr. Henri Becquerel presents to the academy the continuation of his researches into phosphorescence; he establishes the

fact that the laws of intensities of the light emitted by phosphorescent bodies are deduced simply from the consideration of a weakening of the luminous vibrations proportional, at each instant, to the square of the speed of the vibrating particles. The deviation between the simple law and the complete laws observed with certain phosphorescent bodies are due to these bodies containing mixtures of different substances, each emitting light which follows a different law.

Instruction in Electro-Technique.

At the People's Palace in London, there have been instituted practical lectures for the use of workmen, among which those which draw the largest number of auditors are principally the course devoted to electricity. It is to be hoped that so good an example may be followed at Paris, where the number of electricians grows more considerable with every day that passes.

Flour Manufactured by Electricity.

Mr. Kingsland Smith, of St. Paul, has invented the roller process by which flour can be manufactured by electricity; and he thinks that within the next two years all large manufacturing concerns will be run by electricity.

The Mergenthaler Linotype Co., 89 Tribune Building, is erecting a five-story brick factory 100 x 100 feet in Brooklyn for light machinery.

Mrs. McKee, daughter of the President, has joined the army of scribblers and contributes an article to the *Ladies' Home Journal* for February on "The Training of Children."

A PENNY IN THE SLOT.

It is a Little Thing, and Yet It Is
Mighty.

"A penny in the slot."

This doesn't look like a heavy investment, but its earning capacity is great.



A man interested in automatic slot machines told a reporter of THE PHONOGRAM recently something about their

profits. Few people realize the result of an accumulation of pennies or nickels. What becomes of all of these coins? We might honestly answer, they go into the automatic slot machines.

Out of fifty machines in Buffalo there was collected in fifty-eight days \$850.64. There were therefore 85,064 patrons of the machines in that time. We often publish in our correspondence column the receipts taken from the automatic phonograph business, averaging in small towns and where the phonograph is new, as much as \$60 a day.

This industry is now so valuable that companies are forming all over the country to cultivate it.

In calling our readers' attention to the illustration we feel assured that anyone looking for a good money winner will find it an "A 1" article, as well as handsome piece of furniture. The machine stands 5½ feet high, composed of hard wood, beveled plate-glass, and nickel-plated iron work, and is what may be called an *honest slot machine*, as it sells one and two-cent stamps at their face-value, and will close itself when empty, the profit being made on advertising which, in itself, is something very new and novel.

This machine is the only one the U. S. Government has ever endorsed, and the company are selling territory on very reasonable terms. Any further information can be had at the home office, Buffalo Automatic Machine Co., Buffalo, N. Y., or at the office of THE PHONOGRAM.

Phonograph and Talking Automaton.

This exhibit is located in a room off the main hall. The machines are in charge of J. B. Ralston, the State agent of the Edison Phonograph Co. A number of first-class phonographs are on hand, and the latest songs and music will be reproduced.

In addition to the phonographs and in the same room the "Talking Automaton" will be exhibited. This is an unique combination of the Edison phonograph with the mechanical principle of the automaton. J. B. Ralston, of Utica, N. Y., is the inventor, and this is the first time it was ever exhibited to the public.

Phonogram Sunbeams.

Mr. Canfield, of St. Joseph, Mo., writes: "More orders have come in from my advertisement in your valuable journal than I can possibly fill for some time."

Texas Co. write: "Accept our congratulations on your Holiday number."

Louisiana Co.: "We have received your Holiday number, and must compliment you, not only upon the excellent matter, but also its generally tasteful and beautiful appearance. The matter is of such a practical nature that it cannot fail in helping along the cause materially."

The Western Pennsylvania Co.: "We were much pleased with the Holiday number."

The New England Co.: "The last number of your magazine struck us as being a very good and substantial number, and you deserve credit for the enterprise shown."

T. R. Lombard, Vice-president The North American Co.: "I congratulate you upon the appearance of the Holiday number of THE PHONOGRAM, and sincerely trust it has entered upon a year of prosperity, which your efforts deserve."

From the *Sunday Herald*, Washington, D. C.: "We are in receipt of a copy of THE PHONOGRAM and find it a most interesting publication. Its appearance, typographically, is especially fine, the half-tone work being of remarkable excellence."

New York State Appropriation for the World's Fair.

The dry goods merchants of New York City have drawn up a bill to present to the legislature and a letter to Governor Flower, in which they ask for a sufficient appropriation, \$500,000, or part of it, to enable the State to be properly represented at the World's Fair. The committee is composed of members of the following firms: William L. Strong, of William L. Strong & Co., and president of the Central National Bank, chairman; John Claflin, president of the H. B. Claflin Co.; John Gibb, of Mills & Gibb; W. E. Tefft, of Tefft, Weller & Co.; J. Howard Sweetser, of Sweetser, Pembroke & Co.; William F. King, of Calhoun, Robbins & Co., secretary of committee.

The American Gas Light Association ap-

pointed a World's Fair Committee recently to secure space for display. The committee met and presented a request for a separate gas building, but the Fair managers cannot reserve a whole building for the use of an industry that is being rapidly displaced except for fuel purposes. It is thought, however, that by co-operation, the gas companies will make a creditable display. The whole Fair, however, will be illuminated by electricity.

Transportation of Cold.

There is at Denver, Colorado, a private company which exploits a new procedure for the distribution of cold in dwellings, by means of conducting pipes.

This system, according to the *Review of Industrial Chemistry*, includes three lines of pipes. The first serves to transport the ammoniacal gas liquified under pressure, and at about thirty-two millimeters in diameter. The second, which is from fifty to seventy-five millimeters in diameter, according to the distance from the central station returns to the station under the form of gas, the ammonia which has served to create the cold. The third, twenty-five millimeters in diameter, is bound with two others at the residence of each consumer. This is designed to prevent all accumulation of gas in the two other lines of pipes and their branches.

The apparatus, placed with each consumer, communicates by one of its extremities with the conduit of ammonia and by the other with the return conduit. The ammonia penetrates into the coil, and not being under pressure is converted into gas, producing intense cold.

The liquid ammonia is stored at the central station under the pressure of ten kilogrammes. On its return, the ammoniac gas is absorbed by the water, from which it is afterwards separated by distillation.

This system has been in operation at Denver since 1889, and gives satisfaction. It has the advantage over the employment of ice, that it does not cause humidity.

Electric Treatment of Wine.

The question of the effect produced on young wines by an electric current, will be submitted to the convention of electricians, to be held in St. Petersburg next year. It is stated by excellent authorities that fresh wine assumes all the qualities of the fermented and old article after being submitted to the electric treatment.

CORRESPONDENCE.

Washington Notes.

V. H. McRAE, *Publisher THE PHONOGRAM, New York City, N. Y.*

Replying to your request for details of the more recent work of the Columbia Phonograph Co., I take pleasure in saying that a feature of our business for the past month has been extensive and somewhat costly local advertising, in which we make prominent our readiness to furnish phonographs on trial, without cost if unsatisfactory. Experience shows this a most excellent method of leasing or selling phonographs, the only point to guard, of course, being errors of manipulation during the trial. Trial machines are watched with care, the dictation and transcribing being done in the beginning under the eye of a representative of the company; and where men have letters to dispatch and know how to dictate or are willing to learn, we make few failures.

We have also been publishing fresh and pointed testimonials from prominent users in this territory, one of the best coming from Gen. S. A. Whitfield, First Assistant Postmaster-General, and relating to the phonographs in use by him and others in the post-office department.

One day last week we sent four phonographs to the War Department for the use of Assistant Secretary Grant, Chief Clerk Tweedale and others; one to Annapolis to Hon. Frank Brown, Maryland's new governor; one as an addition to the number already in use by Mr. D. F. Murphy, the Senate reporter of debates, and one to a member of the House of Representatives.

A recent well-known subscriber is Mrs. G. R. Alden, widely known as a writer of books under the *nom de plume* of "Pansy." Mr. B. H. Warner, president Washington Loan and Trust Co.; Mr. A. A. Thomas, president of the United States Electric Lighting Co.; Mr. C. C. Carlton, agent of the California Associated Press; Prof. C. K. Urner, of the Columbia College of Commerce; Representatives Greenleaf of New York, Reyburn of Pennsylvania, and Donovan of Ohio, Senator Jones of Arkansas, and Senator Perkins of Kansas, have also recently been equipped with phonographs.

Our Baltimore office did more business in December than ever before in its history;

while the record for January, at this writing, shows a marked improvement, thus far, over December.

We still send THE PHONOGRAM to all our subscribers, and also distribute copies in our offices to persons who call to inquire about the phonograph.

The sale of our musical records, which is constantly increasing, confirms us in our belief that high class records, of which quality is made the leading feature, will always find a market; and that the old proverb, "The best is the cheapest," is especially true in the phonograph business. Yours truly,

E. D. EASTON.

EDISON GENERAL ELECTRIC CO. }
WASHINGTON, D. C., January 15, 1892. }

Editor of the PHONOGRAM.

DEAR SIR:—Seeing a communication in THE PHONOGRAM, dated November 2, 1891, and signed by Henry F. Gilg, secretary of the Western Pennsylvania Phonograph Co., in regard to shaving cylinders, with one-twelfth horse-power motor with two batteries attached, in twenty-seven seconds. I reply to his interrogation that we use in our office an Edison standard motor, one-twelfth horse-power, connected with the local electric light current, and shave cylinders in ten seconds easily.

Our motor is governed by a rheostat, and the speed can be raised or lowered to suit our convenience.

The effect is even more satisfactory than when shaved by a storage battery motor.

Any information wanted regarding details of our method of shaving cylinders, we would gladly furnish.

Hoping this will be of some interest to the readers of your valuable journal, I remain,

Very truly,

W. ROY MITCHELL.

Texas Notes.

At the annual meeting of stockholders of the Texas Phonograph Co. the following board of directors was chosen: John H. Atchinson, H. A. Landes, L. S. McKinney, J. S. Montgomery, A. H. Willie, Thos. Conyngton and Hugh R. Conyngton.

The following officers have been chosen:

H. A. Landes, president; John H. Atchinson, vice-president; Thos. Conyngton, secretary and general manager.

This company have lately moved into commodious quarters on the ground floor, at No. 2209 Post-Office street, affording handsome exhibition rooms opening immediately on the street, as well as ample office and storage room in the rear.

Louisiana Notes.

Our prospects are good all along the line. In business work, every machine put out to date is a decided success and is a powerful argument in placing other machines, as well as in helping to put the phonograph on the practical basis it should occupy.

We are also putting quite a number of machines for home use, and hope during the coming year to largely increase this branch of the business.

The invention of a mailing cylinder that could be sent through the mail would help this branch of the business more powerfully than anything else at present.

We are making arrangements for some very active and attractive work during the approaching Mardi Gras festivities. At this time, New Orleans is thronged with people bent on amusement and sight-seeing, and while we propose for the phonograph to be one of the sights, there are also many opportunities for more serious work, and we expect to place a number of machines during this festival.

Missouri Notes.

During the last three or four months our company have done a most flourishing business. We have leased a large number of commercial machines, and have placed a great many slot machines in various sections of our territory. We have adopted a policy in our nickel-in-the-slot phonographs, which, while dissimilar to that of other companies, we consider a superior method. Instead of operating these phonographs ourselves, we have found it more profitable to lease with each machine or machines placed out the exclusive right for exhibition in a county. Having a very perfect automatic slot machine, the receipts are very gratifying, as shown by the following, which is a copy of a bona fide letter received this day from Messrs. A. Geyer & Co., Lexington, Mo., a small town of about four thousand five hundred inhabitants:

MISSOURI PHONOGRAPH CO., ST. LOUIS, MO.
LEXINGTON, MO., January 10, 1892.

It affords us inexpressible pleasure to inform you that our phonograph venture has proved a grand success, both financially as well as a big advertisement. Thus far, our machine has been on exhibition at one saloon, and of course ladies and children, prohibitionists and negroes have not had an opportunity

of hearing it. Yet, despite this fact, our receipts for fifty days has been \$311. On what terms can we procure a similar outfit?

Yours truly,
A. GEYER & Co.

Query?

"What is the cause of the occasional repetition of a word, or part of a sentence, on a phonograph record?"
A. B."

World's Fair Notes.

John Thorpe, the Floriculture Chief, says that the Exposition will advance floriculture in this country fully twenty-five years.

The Royal Agricultural and Commercial Society, of British Guiana, has decided to hold a local exhibition of its resources preliminary to the display it intends making at Chicago.

The imitation battleship, "Illinois," at the naval pier, in the Exposition grounds, is now rising from the water. Work is progressing satisfactorily on the hull. The deck will measure over all 348 x 69½ feet. This structure is to cost \$100,000 and is the most original illustration of naval architecture ever worked out.

A company has been formed, embracing several very wealthy men, to inaugurate and operate in Chicago a permanent circus after the style of the Hippodrome in Paris. A building, with seating capacity of 5,000 and having a garden on the roof, will be erected, and the attraction will be in operation to entertain World's Fair crowds.

The Coming Motor.

The alternating current motor is said to be the "coming machine" for electrical work. It is well spoken of by those familiar with electric science.

It is authoritatively stated that there is to be a consolidation of the Edison and Thompson-Houston electric systems. Mr. Villard, now president of the Edison General Electric Co., will resign, and Mr. Coffin, of the Thompson-Houston Co., will probably be elected president of the new system. The stock of these companies took a big leap last week in consequence of the anticipated combine.

PHONO CHAT.

An incident occurred at the Hawley House, Cleveland, Ohio, recently which caused a great deal of amusement to a number of traveling men present. One of the ornaments of the house is a phonograph. A guest of the house, who had evidently come from a section of the country where Edison's invention is unknown, stepped up to the phonograph. He viewed it critically, and read the invitation to put a nickel in the slot. Then looking around at the crowd he said: "I never saw one of those electrical machines that could knock me out, and I am going to try this one." He put the required coin in the slot and caught hold of the rubber ear tubes with each hand. He waited for a moment, and then turning with a smile remarked: "There, I have taken the entire charge, and I have not felt the least bit of a shock." A roar of laughter went up, and the young man was much discomfited when he ascertained the nature of the machine with which he had been experimenting.

Mr. John Y. Atlee, the famous artistic whistler, whose records are so extensively sold by the Columbia Phonograph Co., of Washington, D. C., has made a new departure by adding to his list "The Whistling Coon" and "Whistling Susanna," in which he sings as well as whistles. Both of the selections are catching, and Mr. Atlee's articulation, in singing, is so clear and distinct, and his whistling so effective, that these pieces are having a big run. Mr. Atlee's latest combination of singing and whistling is entitled "Why Should I Keep From Whistling," composed by himself, and promising to outrival, in popularity, its predecessors of the same class.

A new variation of the nickel-in-the-slot machine apparatus by which you "lay a parcel on the shelf" and have it delivered. The customer steps on a platform, on which is an oblong box of steel. The top flies open and a steel shelf comes up, on which the package is laid; the sender affixes a stamp valued at fifteen cents, and retires, when the box closes. Wagons make hourly collections. The stamp has a coupon attached, which the sender keeps as a receipt.

The word "hello," spoken into a phonograph, produces five thousand distinct vibrations. Each of these vibrations is capable of

producing one Morse signal. The *Electrical Review* suggests that one telegraph line be equipped with five thousand telegraph operators, and let each send a message; or, better still, duplex the line and use ten thousand operators.

The marriage of Miss Evelyn Agnes Trammell, to Mr. Thomas Conyngton, of Galveston, took place on Wednesday, December the 23d, at Henderson, Texas. Mr. and Mrs. Conyngton will be at home after January 1st, in Galveston, N. W. corner of Winnie and Tenth streets. Mr. Conyngton is the popular manager of the Texas Phonograph Co. We wish them all the happiness possible.

We had a call last week from Mr. George H. Dikeman, Manager of the Buffalo Automatic Machine Co., of Buffalo, N. Y., and by the way, his company have a new device for the automatic selling of postage stamps.

Dr. Frank M. Deems delivered his successful lantern lecture on "Two Years and a Half with Thomas A. Edison," before the Cathedral school of St. Paul, at Garden City, Long Island, on the 26th of January, and was very favorably received. The Dr. gives over one hundred fine, clear and highly finished views during the course of this lecture. From the favorable press notices and comments of those who have heard him, we are sure that Dr. Deems will meet everywhere the attention and favor of the public.

We have received catalogue list of the musical records manufactured by the Louisiana Phonograph Co., and find same reasonable. We herewith append price-list which includes a large variety of marches, schottisches, polkas, waltzes and a miscellaneous collection of arrangements from the best operatic musical authors.

Paoletti's band, price \$1.25 each. There are vocal selections: Vasnier, banjo quartetts, \$1.25 each; Brady speeches, \$1.25 each; negro sermons by Louis Vasnier, \$1.25 each; artistic whistler, \$1.25 each; United States marine band, \$1.50 each; parlor orchestra, \$1.25 each; vocal selections, \$1.00 each. MUSIC LOUD AND CLEAR.

From distant Omaha we receive words of cheer and encouragement, in the shape of an order for a number of extra copies of THE PHONOGRAM, and the Nebraska Phonograph Co., through their Vice-president, Mr. H. E. Cary, transmits to us this proof of their inter-

est in our work here, and also expresses a hearty appreciation of our efforts to forward progress of the phonograph.

A stranger was seen standing in front of one of the automatics in a Buffalo hotel a day or so ago, eyeing the machine very intently. The clerk of the hotel, noticing that the machine was in operation, but that the gentleman did not have the tubes in his ears, asked him why he didn't listen to the machine. The stranger answered:

"I dropped a nickel in that machine, and I want my *photograph*."

The clerk explained that the machine was not intended to photograph.

The stranger looked surprised, and said, pointing to the sign over the machine, "That says 'Edison's Automatic Photograph,' don't it?"

The clerk was unable to satisfy the incredulous visitor, and the latter walked away disgusted.

Authors and Publishers.

A supplement to the *Orange Journal* comes to us conveying many statistics and much useful information concerning Orange, South Orange, East Orange and West Orange. This "cluster of fruit" is not only pleasing in itself but derives additional interest from the fact that the renowned Edison has chosen it for his private residence.

As time passes, physicians are more averse to using medicine for healing the sick. They seek the aid of other remedial agents and find electricity and galvanism to be wonderfully effective. This is explained clearly in Dr. Henry De Kraft's pamphlet.

A catalogue of phonographic works received contains notices of shorthand publications by Ben Pitman and Jerome B. Howard, and practical guides to typewriting and kindred subjects by Bates Torrey, which the Phonographic Institute of Cincinnati, Ohio, offer the public on moderate terms.

The *Cosmopolitan* is nothing if not progressive. The addition of Mr. Howells' name to the distinguished corps of editors is a master stroke of good policy. The leading American periodicals occupy a proud position in the literature of the world at the present day.

The *Review of Reviews* resembles nothing so much as a bee, which after extracting the saccharine element contained in flowers, eliminates and preserves its best properties by submitting them to a sort of distillatory process, whence they issue in improved form.

The articles by Mr. Augustus Dubois and M. Camille Flammarion, appearing in the *Century* and *Arena*, subjected to this treatment are increased in value, because the work of the critic, like that of the diamond-cutter, en-

hances real merit. A category of other topics, dazzling in quality and number, accompany these, but the first two are here noted especially, on account of the transcendent importance of the themes.

The following monthly publications have been received: *THE WRITER*, a monthly magazine for literary workers, published at Boston; *THE UNIVERSAL WRITER* devoted to Typewriting and Shorthand; Frank C. Peck, publisher, Syracuse, N. Y.; *PERNIN'S MONTHLY STENOGRAPHER*, published at Detroit, Mich., and *THE STENOGRAPHER'S DIARY*, published at Waterbury, Conn. Also handsomely bound volume, entitled *ANALOGICAL SYLLABIC SHORTHAND*, by Francis H. Hemperley, editor of *THE STENOGRAPHER*, and published at Philadelphia, Pa.

The following distinguished writers, all of whom are well known as prominent electricians, have become connected with the editorial department of our able French contemporary, *L'Electricien*, since the beginning of the year: M. Monier, Professeur a l'Ecole Centrale des Arts et Manufactures; M. Eric Gerard, Directeur de l'Institut Electrotechnique Montefiore; M. Felix Lucas, Ingenieur en Chef des Ponts et Chausses, Administrateur des Chemins de fer de l'Etat; M. Emile Diudonne, Ingenieur-Electricien; M. Eugene Meylan, Ingenieur-Electricien; M. Montpellier, Fondateur de la Revue Internationale de L'Electricite.

READING NOTICES.

The demand for typewriter supplies which has in the last few years increased in ratio proportionate to the increase of sale of typewriting machines, has brought into the market a large number of manufacturers, all having goods more or less practical and useful.

The John Underwood Manufacturing Co. are pioneers in this business, having been established since the typewriter industry was in its infancy. Mr. Underwood's lines of typewriter ribbons, carbon papers, printing inks and writing papers, stand at the head, and being made upon scientific principles by experienced chemists, they are always reliable, uniform, and give perfect satisfaction.

The Underwood factory in Brooklyn, employing upwards of a hundred hands, is a busy bee-hive, which is the greatest evidence of the progressive enterprise of this firm. Mr. Underwood has also opened branch offices in different localities, the Western branch having headquarters at Chicago, and has even pushed his way into Canada with headquarters at Toronto.

While the recent death of Mr. Underwood's brother, who was also his junior partner in business, brought a vacancy not easy to fill, yet the high standard of excellence maintained by Mr. Underwood's manufactures is so well known, that it would be difficult to imagine his star except in the ascendant.

HAUGH & KEENAN,

33, 34 AND 35 WATER STREET.

PITTSBURGH, PA.

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We make a specialty of manufacturing all grades and styles of Phonograph Cases, Slot Cabinets and Telephone Boxes.

WRITE FOR ESTIMATES.

Refer to Western Pennsylvania Phonograph Co.

THE
DENSMORE
TYPEWRITER.



GEO. B. MOTHERAL,
GENERAL AGENT

*For Western and Central Pennsylvania and
West Virginia.*

ALL KINDS OF TYPEWRITER SUPPLIES.

NO. 146 FIFTH AVENUE.

"IMPROVEMENT IS THE ORDER OF THE DAY."



The New Special No. 3 Caligraph has met with universal favor because it has two interchangeable platens, which can be adjusted in less than thirty seconds, enabling an operator to produce the work of two machines from one; because it has a positive ribbon movement, which presents a fresh surface of the ribbon for each type impression; because it has a wheel dog stay and six additional characters; because it has a hollow type bar, which gives lightness and strength; because it has an adjustable type hanger, which gives permanent alignment; because it has a key for every character and an adjustable feed guide. In fact, the Special No. 3 Caligraph is the acme of perfection in typewriters.

SEND FOR ILLUSTRATED CATALOGUE TO

THE AMERICAN WRITING MACHINE COMPANY,
237 BROADWAY, NEW YORK.

Branch Offices: { 1003 Arch Street, Philadelphia. }
 { 14 W. Fourth Street, Cincinnati. }

Branch Factory, Coventry, England.
Merrill Tinsmith Co., Ltd.

NEW YORK PHONOGRAPH CO.,

257 Fifth Avenue, New York City.

Phonographs and Graphophones Rented for Business Purposes, for Family Use, and for Exhibitions.

NOTICE.

This Company will make a specialty of furnishing a high class of assorted records packed in boxes ready for shipment. Each box will contain twelve carefully assorted musical records, and the boxes will each be numbered so that in ordering additional boxes there will be no duplicates.

Many choice records can thus be furnished which cannot be kept regularly in stock, and an infinite variety can thus be had.

For example, Box No. 1 contains :

1. Vocal and Orchestral: Sing Those Pretty Songs Again—J. W. Meyers.
2. " " " Waiting by the Sea—Joe Natun.
3. " " " The Song that Reached My Heart—Ed. Clarence.
4. Vocal and Piano: Sally in Our Alley—A. E. Burton.
5. " " " Scanlan's Swing Song—Geo. J. Gashin.
6. " " " Friar of Orders Gray—Lloyd Wilson.
7. Gilmore's Band: Volunteers' March.
8. " " " with Cornet Solo: Pretty Peggy.
9. Holding's Military Band: Pretty Violets—Song and Dance.
10. Columbia (Vocal) Quartette: Tenting To-night.
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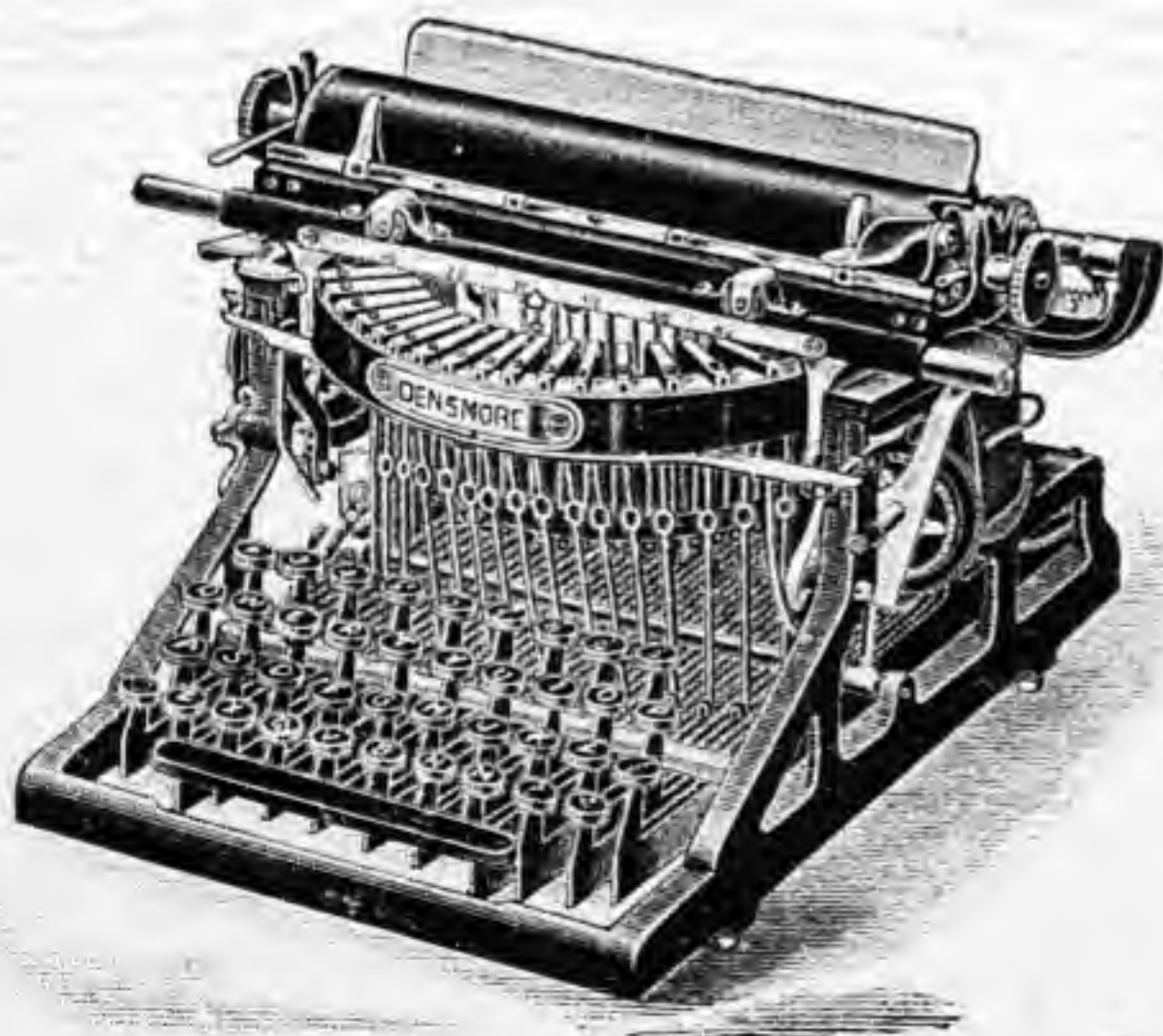
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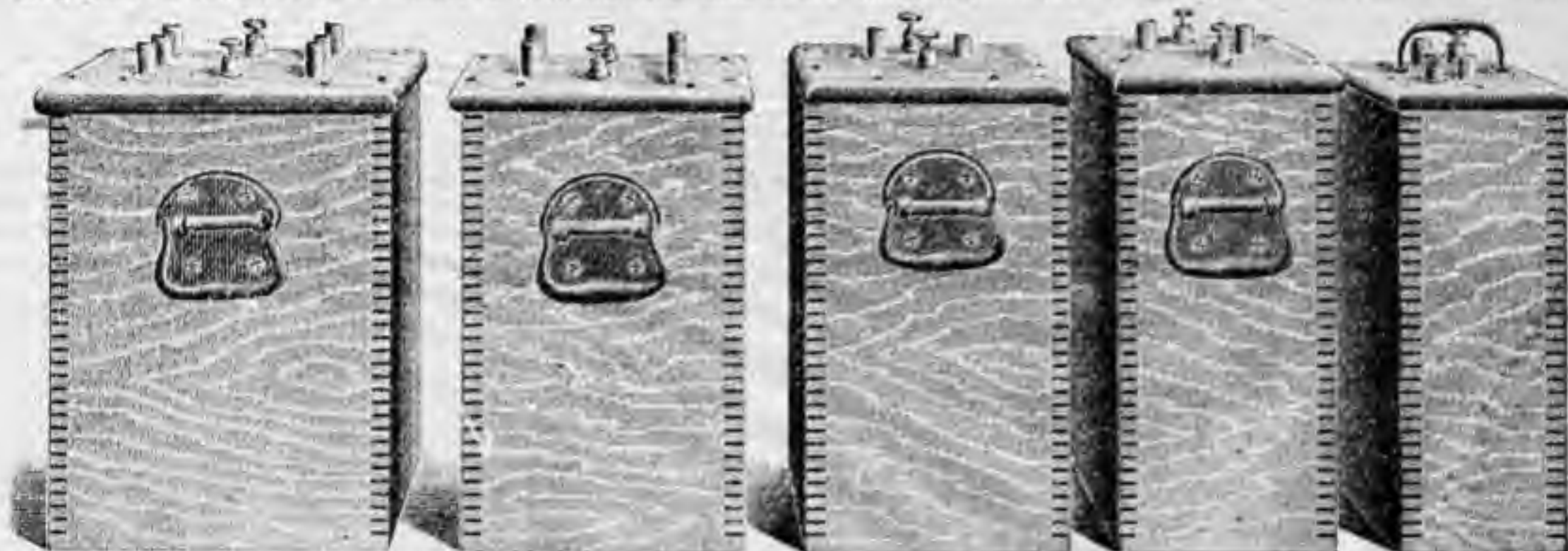
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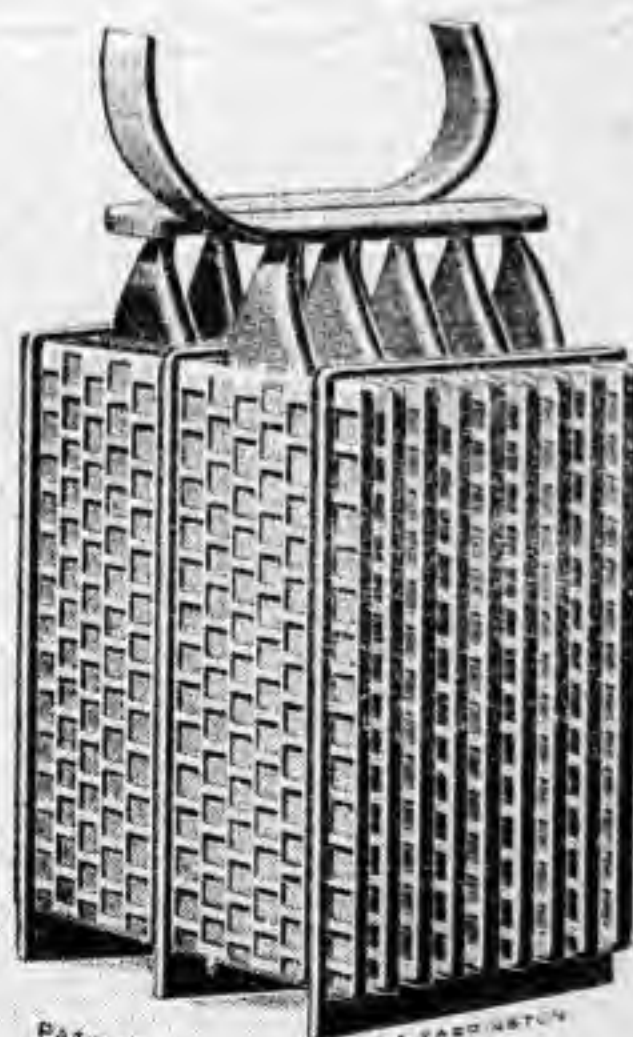
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